

PH4500

Allowable Pressure Drop Tables

28000 Series VariPak

Precise Microflow

Control Valves

Included in this document are pressure drop tables for the following model numbers:

- 28002** Standard VariPak with Adjustable C_v Actuator
- 28001** Standard VariPak with Non-Adjustable C_v Actuator
- 28002 MS** Varilog Anti-Cavitation VariPak with Adjustable C_v Actuator
- 28001 MS** Varilog Anti-Cavitation VariPak with Non-Adjustable C_v Actuator
- 28000 HP** High Pressure VariPak
- 28000 BS** Bellows Seal VariPak
- 28000 EB** Cryogenic VariPak

28000 Series Allowable Pressure Drop Tables – PH4500

Introduction

Masoneilan has developed allowable pressure drop tables for various combinations of design configurations, material options, shutoff class, and actuation for use as a general application guideline. Due to the large amount of options available for some product lines, there may be specific design configurations not fully represented within these published pressure drop tables. Since this is primarily a quick reference guideline, users should verify product selection (relative to specific service conditions) either by using the Masoneilan sizing and selection program or consulting with your local Masoneilan Sales Office.

Pressure Drop Table Index

Standard Construction – ANSI Class 150 to 1500

Valve Model 28002

Adjustable C_v Actuator

Valve Model	Actuator Type	Positioner	Air Action	Seat Leakage	Pressure Drop Units	Page
28002	Adjustable C _v	Any	ATO or ATC	IV	psi & bar	4
		7700	ATC	V	psi & bar	5
		7700	ATO	V	psi & bar	6
		Other Positioners	ATC	V	psi & bar	7
		Other Positioners	ATO	V	psi & bar	8

Standard Construction – ANSI Class 150 to 1500

Valve Model 28001

Non-Adjustable C_v Actuator

Valve Model	Actuator Type	Positioner	Air Action	Seat Leakage	Pressure Drop Units	Page
28001	Non-Adjustable C _v	Any	ATO or ATC	IV	psi & bar	9
		7700	ATC	V	psi & bar	10
		7700	ATO	V	psi & bar	10
		Other Positioners	ATC	V	psi & bar	11
		Other Positioners	ATO	V	psi & bar	11

28000 Series Allowable Pressure Drop Tables – PH4500

**Varilog Anti-Cavitation VariPak – ANSI Class 150 to 1500
Valve Model 28002 MS
Adjustable C_v Actuator**

Valve Model	Actuator Type	Positioner	Air Action	Seat Leakage	Pressure Drop Units	Page
28002 MS	Adjustable C _v	Any	ATO or ATC	IV	psi & bar	12
		7700	ATC	V	psi & bar	13
		7700	ATO	V	psi & bar	13
		Other Positioners	ATC	V	psi & bar	14
		Other Positioners	ATO	V	psi & bar	14

**Varilog Anti-Cavitation VariPak – ANSI Class 150 to 1500
Valve Model 28001 MS
Non-Adjustable C_v Actuator**

Valve Model	Actuator Type	Positioner	Air Action	Seat Leakage	Pressure Drop Units	Page
28001 MS	Non-Adjustable C _v	Any	ATO or ATC	IV	psi & bar	12
		Any	ATC	V	psi & bar	15
		Any	ATO	V	psi & bar	15

**High Pressure VariPak – ANSI Class 2500
Valve Model 28000 HP**

Valve Model	Actuator Type	Positioner	Air Action	Seat Leakage	Pressure Drop Units	Page
28000 HP	Any	Any	ATO or ATC	IV	psi & bar	16

**Bellows Seal VariPak – ANSI Class 150 to 600
Valve Model 28000 BS**

Valve Model	Actuator Type	Positioner	Air Action	Seat Leakage	Pressure Drop Units	Page
28000 BS	Any	Any	ATO or ATC	IV	psi & bar	16

**Cryogenic VariPak – ANSI Class 150 to 600
Valve Model 28000 EB**

Valve Model	Actuator Type	Positioner	Air Action	Seat Leakage	Pressure Drop Units	Page
28000 EB	Any	Any	ATO or ATC	IV	psi & bar	16

**Allowable Pressure Drop for 28002 Series
Class IV with Adjustable C_v Actuator**

Standard **FLANGELESS** Construction
Air to Close or Air to Open with Any Positioner
 Leakage: Per IEC 534-4 and ANSI/FCI **Class IV**
 PTFE Packing

Body Rating: ANSI Class 150 to 1500

Trim No.	Max. C _v	Spring Range (psi)	Max. Supply Pressure		Maximum DP	
			psi	bar	psi	bar
9	0.004	3 - 15	20	1.4	3000	207
8	0.01	3 - 15	20	1.4	3000	207
7	0.025	3 - 15	20	1.4	3000	207
6	0.05	3 - 15	20	1.4	3000	207
5	0.1	3 - 15	20	1.4	3000	207
4	0.25	3 - 15	20	1.4	2320	160
3	0.6	6 - 24	30	2.1	3000	207
2	1.2	6 - 24	30	2.1	1450	100
1	2.3	6 - 24	30	2.1	1450	100
0	3.8	6 - 24	30	2.1	725	50

Note: Inlet pressure (P1) must not exceed maximum ΔP.

Standard **FLANGED** Construction
Air to Close or Air to Open with Any Positioner
 Leakage: Per IEC 534-4 and ANSI/FCI **Class IV**
 PTFE Packing

Body Rating: ANSI Class 150 to 600

Trim No.	Max. C _v	Spring Range (psi)	Max. Supply Pressure		Maximum DP					
					ANSI Class 150		ANSI Class 300		ANSI Class 600	
			psi	bar	psi	bar	psi	bar	psi	bar
9	0.004	3 - 15	20	1.4	275	20	720	50	1440	100
8	0.01	3 - 15	20	1.4	275	20	720	50	1440	100
7	0.025	3 - 15	20	1.4	275	20	720	50	1440	100
6	0.05	3 - 15	20	1.4	275	20	720	50	1440	100
5	0.1	3 - 15	20	1.4	275	20	720	50	1440	100
4	0.25	3 - 15	20	1.4	275	20	720	50	1440	100
3	0.6	6 - 24	30	2.1	275	20	720	50	1440	100
2	1.2	6 - 24	30	2.1	275	20	720	50	1440	100
1	2.3	6 - 24	30	2.1	275	20	720	50	1440	100
0	3.8	6 - 24	30	2.1	275	20	720	50	720	50

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

Body Rating: ANSI Class 900 to 1500

Trim No.	Max. C _v	Spring Range (psi)	Max. Supply Pressure		Maximum DP			
					ANSI Class 900		ANSI Class 1500	
			psi	bar	psi	bar	psi	bar
9	0.004	3 - 15	20	1.4	2160	150	3000	207
8	0.01	3 - 15	20	1.4	2160	150	3000	207
7	0.025	3 - 15	20	1.4	2160	150	3000	207
6	0.05	3 - 15	20	1.4	2160	150	3000	207
5	0.1	3 - 15	20	1.4	2160	150	3000	207
4	0.25	3 - 15	20	1.4	2160	150	2320	160
3	0.6	6 - 24	30	2.1	2160	150	3000	207
2	1.2	6 - 24	30	2.1	1440	100	1450	100
1	2.3	6 - 24	30	2.1	1440	100	1450	100
0	3.8	6 - 24	30	2.1	720	50	725	50

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

**Allowable Pressure Drop for 28002 Series
Class V with Adjustable C_v Actuator**

Standard VariPak
Adjustable Actuator C_v Range

Trim No.	C _v Setting							
	A (Max.)	B	C	D	E	F	G	H (Min.)
9	0.004	0.0036	0.0032	0.0028	0.0024		0.002	0.0016
8	0.01	0.009	0.008	0.007	0.006		0.005	0.004
7	0.025	0.023	0.021	0.019	0.016		0.013	0.010
6	0.05	0.045	0.040	0.035	0.030		0.025	0.020
5	0.1	0.09	0.08	0.07	0.06		0.05	0.04
4	0.25	0.23	0.21	0.19	0.16		0.13	0.10
3	0.6	0.55	0.50	0.45	0.40	0.35	0.30	0.25
2	1.2	1.1	1.0	0.9	0.8	0.7	0.6	0.5
1	2.3	2.1	1.9	1.7	1.5	1.3	1.1	0.9
0	3.8	3.5	3.2	2.9	2.6	2.3	1.9	1.5

Standard VariPak
Air to Close with 7700 Positioners
Body Rating: ANSI Class 150 to 1500
Leakage: Per IEC 534-4 and ANSI/FCI **Class V**
PTFE Packing

C_v Setting A to D

Trim No.	Spring Range (psi)	Max. Supply Pressure		Maximum DP							
				A (Max.)		B		C		D	
		psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
9	3 - 15	20	1.4	3000	207	3000	207	3000	207	3000	207
8	3 - 15	20	1.4	3000	207	3000	207	3000	207	3000	207
7	3 - 15	20	1.4	3000	207	3000	207	3000	207	3000	207
6	3 - 15	20	1.4	3000	207	3000	207	3000	207	3000	207
5	3 - 15	20	1.4	3000	207	3000	207	3000	207	3000	207
4	3 - 15	20	1.4	1650	114	2030	140	2480	171	3000	207
3	6 - 24	30	2.1	3000	207	3000	207	3000	207	3000	207
2	6 - 24	30	2.1			75	5	190	13	335	23
1	6 - 24	30	2.1			75	5	190	13	335	23
0	6 - 24	30	2.1								

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

C_v Setting E to H

Trim No.	Spring Range (psi)	Max. Supply Pressure		Maximum DP							
				E		F		G		H (Min.)	
		psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
9	3 - 15	20	1.4	3000	207			3000	207	3000	207
8	3 - 15	20	1.4	3000	207			3000	207	3000	207
7	3 - 15	20	1.4	3000	207			3000	207	3000	207
6	3 - 15	20	1.4	3000	207			3000	207	3000	207
5	3 - 15	20	1.4	3000	207			3000	207	3000	207
4	3 - 15	20	1.4	3000	207			3000	207	3000	207
3	6 - 24	30	2.1	3000	207	3000	207	3000	207	3000	207
2	6 - 24	30	2.1	610	42	860	59	1260	87	2290	158
1	6 - 24	30	2.1	610	42	860	59	1260	87	2290	158
0	6 - 24	30	2.1					205	14	670	46

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

**Allowable Pressure Drop for 28002 Series
Class V with Adjustable C_v Actuator**

Standard VariPak

Air to Open with 7700 Positioners

Body Rating: ANSI Class 150 to 1500

Leakage: Per IEC 534-4 and ANSI/FCI **Class V**

PTFE Packing

C_v Setting A to D

Trim No.	Spring Range (psi)	Max. Supply Pressure		Maximum DP							
				A (Max.)		B		C		D	
		psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
9	3 - 15	20	1.4	3000	207	3000	207	3000	207	3000	207
8	3 - 15	20	1.4	3000	207	3000	207	3000	207	3000	207
7	3 - 15	20	1.4	3000	207	3000	207	3000	207	3000	207
6	3 - 15	20	1.4	3000	207	3000	207	3000	207	3000	207
5	3 - 15	20	1.4	3000	207	3000	207	3000	207	3000	207
4	3 - 15	20	1.4					915	63	1840	127
3	6 - 24	30	2.1	3000	207	3000	207	3000	207	3000	207
2	6 - 24	30	2.1			350	24	725	50	1120	77
1	6 - 24	30	2.1			350	24	725	50	1120	77
0	6 - 24	30	2.1							145	10

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

C_v Setting E to H

Trim No.	Spring Range (psi)	Max. Supply Pressure		Maximum DP							
				E		F		G		H (Min.)	
		psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
9	3 - 15	20	1.4	3000	207			3000	207	3000	207
8	3 - 15	20	1.4	3000	207			3000	207	3000	207
7	3 - 15	20	1.4	3000	207			3000	207	3000	207
6	3 - 15	20	1.4	3000	207			3000	207	3000	207
5	3 - 15	20	1.4	3000	207			3000	207	3000	207
4	3 - 15	20	1.4	2785	192			3000	207	3000	207
3	6 - 24	30	2.1	3000	207	3000	207	3000	207	3000	207
2	6 - 24	30	2.1	1510	104	1990	137	2540	175	3000	207
1	6 - 24	30	2.1	1510	104	1990	137	2540	175	3000	207
0	6 - 24	30	2.1	305	21	520	36	770	53	1090	75

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

**Allowable Pressure Drop for 28002 Series
Class V with Adjustable C_v Actuator**

Standard VariPak

Air to Close with Other Positioners

Body Rating: ANSI Class 150 to 1500

Leakage: Per IEC 534-4 and ANSI/FCI **Class V**

PTFE Packing

C _v Setting A to D				Maximum DP							
Trim No.	Spring Range (psi)	Max. Supply Pressure		A (Max.)		B		C		D	
		psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
9	3 - 15	20	1.4	3000	207	3000	207	3000	207	3000	207
8	3 - 15	20	1.4	3000	207	3000	207	3000	207	3000	207
7	3 - 15	20	1.4	3000	207	3000	207	3000	207	3000	207
6	3 - 15	20	1.4	3000	207	3000	207	3000	207	3000	207
5	3 - 15	20	1.4	3000	207	3000	207	3000	207	3000	207
4	3 - 15	20	1.4	3000	207	3000	207	3000	207	3000	207
3	6 - 24	30	2.1	3000	207	3000	207	3000	207	3000	207
2	6 - 24	30	2.1	520	36	655	45	810	56	990	68
1	6 - 24	30	2.1	520	36	655	45	810	56	990	68
0	6 - 24	30	2.1							80	6

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

C _v Setting E to H				Maximum DP							
Trim No.	Spring Range (psi)	Max. Supply Pressure		E		F		G		H (Min.)	
		psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
9	3 - 15	20	1.4	3000	207			3000	207	3000	207
8	3 - 15	20	1.4	3000	207			3000	207	3000	207
7	3 - 15	20	1.4	3000	207			3000	207	3000	207
6	3 - 15	20	1.4	3000	207			3000	207	3000	207
5	3 - 15	20	1.4	3000	207			3000	207	3000	207
4	3 - 15	20	1.4	3000	207			3000	207	3000	207
3	6 - 24	30	2.1	3000	207	3000	207	3000	207	3000	207
2	6 - 24	30	2.1	1320	91	1625	112	2145	148	3000	207
1	6 - 24	30	2.1	1320	91	1625	112	2145	148	3000	207
0	6 - 24	30	2.1	230	16	365	25	600	41	1175	81

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

**Allowable Pressure Drop for 28002 Series
Class V with Adjustable C_v Actuator**

Standard VariPak

Air to Open with Other Positioners

Body Rating: ANSI Class 150 to 1500

Leakage: Per IEC 534-4 and ANSI/FCI **Class V**

PTFE Packing

C_v Setting A to D

Trim No.	Spring Range (psi)	Max. Supply Pressure		Maximum DP							
				A (Max.)		B		C		D	
				psi	bar	psi	bar	psi	bar	psi	bar
9	3 - 15	20	1.4	2000	138	3000	207	3000	207	3000	207
8	3 - 15	20	1.4	2000	138	3000	207	3000	207	3000	207
7	3 - 15	20	1.4	2000	138	3000	207	3000	207	3000	207
6	3 - 15	20	1.4	2000	138	3000	207	3000	207	3000	207
5	3 - 15	20	1.4	3000	207	3000	207	3000	207	3000	207
4	3 - 15	20	1.4					95	6.5	915	63
3	6 - 24	30	2.1	3000	207	3000	207	3000	207	3000	207
2	6 - 24	30	2.1			190	13	550	38	915	63
1	6 - 24	30	2.1			190	13	550	38	915	63
0	6 - 24	30	2.1							55	4

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

C_v Setting E to H

Trim No.	Spring Range (psi)	Max. Supply Pressure		Maximum DP							
				E		F		G		H (Min.)	
				psi	bar	psi	bar	psi	bar	psi	bar
9	3 - 15	20	1.4	3000	207			3000	207	3000	207
8	3 - 15	20	1.4	3000	207			3000	207	3000	207
7	3 - 15	20	1.4	3000	207			3000	207	3000	207
6	3 - 15	20	1.4	3000	207			3000	207	3000	207
5	3 - 15	20	1.4	3000	207			3000	207	3000	207
4	3 - 15	20	1.4	1740	120			3000	207	3000	207
3	6 - 24	30	2.1	3000	207	3000	207	3000	207	3000	207
2	6 - 24	30	2.1	1275	88	1725	119	2250	155	2930	202
1	6 - 24	30	2.1	1275	88	1725	119	2250	155	2930	202
0	6 - 24	30	2.1	205	14	405	28	640	44	945	65

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

**Allowable Pressure Drop for 28001 Series
Class IV with Non-Adjustable C_v Actuator**

Standard **FLANGELESS** Construction

Air to Close or Air to Open with Any Positioner

Body Rating: ANSI Class 150 to 1500

Leakage: Per IEC 534-4 and ANSI/FCI **Class IV**

PTFE Packing

Trim No.	Max. C _v	Spring Range (psi)	Max. Supply Pressure		Maximum DP	
			psi	bar	psi	bar
9	0.004	3 - 15	20	1.4	3000	207
8	0.01	3 - 15	20	1.4	3000	207
7	0.025	3 - 15	20	1.4	3000	207
6	0.05	3 - 15	20	1.4	3000	207
5	0.1	3 - 15	20	1.4	3000	207
4	0.25	3 - 15	20	1.4	1815	125
3	0.6	6 - 24	30	2.1	3000	207
2	1.2	6 - 24	30	2.1	1235	85
1	2.3	6 - 24	30	2.1	1235	85
0	3.8	6 - 24	30	2.1	510	35

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

Standard **FLANGED** Construction

Air to Close or Air to Open with Any Positioner

Leakage: Per IEC 534-4 and ANSI/FCI **Class IV**

PTFE Packing

Body Rating: ANSI Class 150 to 600

Trim No.	Max. C _v	Spring Range (psi)	Max. Supply Pressure		Maximum DP					
					ANSI Class 150		ANSI Class 300		ANSI Class 600	
			psi	bar	psi	bar	psi	bar	psi	bar
9	0.004	3 - 15	20	1.4	275	20	720	50	1440	100
8	0.01	3 - 15	20	1.4	275	20	720	50	1440	100
7	0.025	3 - 15	20	1.4	275	20	720	50	1440	100
6	0.05	3 - 15	20	1.4	275	20	720	50	1440	100
5	0.1	3 - 15	20	1.4	275	20	720	50	1440	100
4	0.25	3 - 15	20	1.4	275	20	720	50	1440	100
3	0.6	6 - 24	30	2.1	275	20	720	50	1440	100
2	1.2	6 - 24	30	2.1	275	20	720	50	1235	85
1	2.3	6 - 24	30	2.1	275	20	720	50	1235	85
0	3.8	6 - 24	30	2.1	275	20	510	35	510	35

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

Body Rating: ANSI Class 900 to 1500

Trim No.	Max. C _v	Spring Range (psi)	Max. Supply Pressure		Maximum DP			
					ANSI Class 900		ANSI Class 1500	
			psi	bar	psi	bar	psi	bar
9	0.004	3 - 15	20	1.4	2160	150	3000	207
8	0.01	3 - 15	20	1.4	2160	150	3000	207
7	0.025	3 - 15	20	1.4	2160	150	3000	207
6	0.05	3 - 15	20	1.4	2160	150	3000	207
5	0.1	3 - 15	20	1.4	2160	150	3000	207
4	0.25	3 - 15	20	1.4	1815	125	1815	125
3	0.6	6 - 24	30	2.1	2160	150	3000	207
2	1.2	6 - 24	30	2.1	1235	85	1235	85
1	2.3	6 - 24	30	2.1	1235	85	1235	85
0	3.8	6 - 24	30	2.1	510	35	510	35

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

**Allowable Pressure Drop for 28001 Series
Class V with Non-Adjustable Cv Actuator**

Standard Varipak

Air to Close with 7700 Positioners

Body Rating: ANSI Class 150 to 1500

Leakage: Per IEC 534-4 and ANSI/FCI **Class V**

PTFE Packing

Trim No.	Max. C _v	Spring Range (psi)	Max. Supply Pressure		Maximum DP	
			psi	bar	psi	bar
9	0.004	3 - 15	25	1.7	3000	207
8	0.01	3 - 15	25	1.7	3000	207
7	0.025	3 - 15	25	1.7	3000	207
6	0.05	3 - 15	25	1.7	3000	207
5	0.1	3 - 15	25	1.7	3000	207
4	0.25	3 - 15	25	1.7	3000	207
3	0.6	6 - 24	40	2.8	3000	207
2	1.2	6 - 24	40	2.8	3000	207
1	2.3	6 - 24	40	2.8	3000	207
0	3.8	6 - 24	40	2.8	1410	97

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

Standard Varipak

Air to Open with 7700 Positioners

Body Rating: ANSI Class 150 to 1500

Leakage: Per IEC 534-4 and ANSI/FCI **Class V**

PTFE Packing

Trim No.	Max. C _v	Spring Range (psi)	Max. Supply Pressure		Maximum DP	
			psi	bar	psi	bar
9	0.004	3 - 15	20	1.4	3000	207
8	0.01	3 - 15	20	1.4	3000	207
7	0.025	3 - 15	20	1.4	3000	207
6	0.05	3 - 15	20	1.4	3000	207
5	0.1	3 - 15	20	1.4	3000	207
4	0.25	3 - 15	20	1.4		
3	0.6	6 - 24	30	2.1	3000	207
2	1.2	6 - 24	30	2.1		
1	2.3	6 - 24	30	2.1		
0	3.8	6 - 24	30	2.1		

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

**Allowable Pressure Drop for 28001 Series
Class V with Non-Adjustable Cv Actuator**

Standard VariPak

Air to Close with Other Positioners

Body Rating: ANSI Class 150 to 1500

Leakage: Per IEC 534-4 and ANSI/FCI **Class V**

PTFE Packing

Trim No.	Max. C _v	Spring Range (psi)	Max. Supply Pressure		Maximum DP	
			psi	bar	psi	bar
9	0.004	3 - 15	25	1.7	3000	207
8	0.01	3 - 15	25	1.7	3000	207
7	0.025	3 - 15	25	1.7	3000	207
6	0.05	3 - 15	25	1.7	3000	207
5	0.1	3 - 15	25	1.7	3000	207
4	0.25	3 - 15	25	1.7	3000	207
3	0.6	6 - 24	40	2.8	3000	207
2	1.2	6 - 24	40	2.8	3000	207
1	2.3	6 - 24	40	2.8	3000	207
0	3.8	6 - 24	40	2.8	1670	115

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

Standard VariPak

Air to Open with Other Positioners

Body Rating: ANSI Class 150 to 1500

Leakage: Per IEC 534-4 and ANSI/FCI **Class V**

PTFE Packing

Trim No.	Max. C _v	Spring Range (psi)	Max. Supply Pressure		Maximum DP	
			psi	bar	psi	bar
9	0.004	3 - 15	20	1.4	1205	83
8	0.01	3 - 15	20	1.4	1205	83
7	0.025	3 - 15	20	1.4	1205	83
6	0.05	3 - 15	20	1.4	1205	83
5	0.1	3 - 15	20	1.4	3000	207
4	0.25	3 - 15	20	1.4		
3	0.6	6 - 24	30	2.1	2945	203
2	1.2	6 - 24	30	2.1		
1	2.3	6 - 24	30	2.1		
0	3.8	6 - 24	30	2.1		

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

**Allowable Pressure Drop for 28000 MS Series
Class IV with Adjustable and Non-Adjustable C_v Actuator**

Varilog Anti-Cavitation VariPak
Adjustable C_v Type Actuator
Air to Close or Air to Open with Any Positioner
 Body Rating: ANSI Class 1500
 Leakage: Per IEC 534-4 and ANSI/FCI **Class IV**
 PTFE Packing

Trim No.	Max. C _v	Spring Range (psi)	Max. Supply Pressure		Maximum DP	
			psi	bar	psi	bar
6	0.05	6 - 24	30	2.1	2900	200
5	0.1	6 - 24	30	2.1	2900	200
4	0.25	6 - 24	30	2.1	2900	200
3	0.6	6 - 24	30	2.1	1450	100

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

Varilog Anti-Cavitation VariPak
Non-Adjustable C_v Type Actuator
Air to Close or Air to Open with Any Positioner
 Body Rating: ANSI Class 1500
 Leakage: Per IEC 534-4 and ANSI/FCI **Class IV**
 PTFE Packing

Trim No.	Max. C _v	Spring Range (psi)	Max. Supply Pressure		Maximum DP	
			psi	bar	psi	bar
6	0.05	6 - 24	30	2.1	2685	185
5	0.1	6 - 24	30	2.1	2685	185
4	0.25	6 - 24	30	2.1	2685	185
3	0.6	6 - 24	30	2.1	1160	80

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

**Allowable Pressure Drop for 28002 MS Series
Class V with Adjustable C_v Actuator**

Varilog Anti-Cavitation VariPak
 Adjustable Actuator C_v Range

Trim No.	C _v Setting							
	A (Max.)	B	C	D	E	F	G	H (Min.)
6	0.05	0.045	0.04	0.035	0.03		0.025	0.02
5	0.1	0.09	0.08	0.07	0.06		0.05	0.04
4	0.25	0.23	0.21	0.19	0.16		0.13	0.1
3	0.6	0.55	0.5	0.45	0.4	0.35	0.3	0.25

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

**Allowable Pressure Drop for 28002 MS Series
Class V with Adjustable C_v Actuator**

Varilog Anti-Cavitation VariPak

Air to Close with 7700 Positioners

Body Rating: ANSI Class 1500

Leakage: Per IEC 534-4 and ANSI/FCI **Class V**

PTFE Packing

C _v Setting A to D				Maximum DP							
Trim No.	Spring Range (psi)	Max. Supply Pressure		A (Max.)		B		C		D	
		psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
6	6 - 24	30	2.1	870	60	1090	75	1335	92	1625	112
5	6 - 24	30	2.1	870	60	1090	75	1335	92	1625	112
4	6 - 24	30	2.1	870	60	1090	75	1335	92	1625	112
3	6 - 24	30	2.1	0	0	40	3	160	11	290	20

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

C _v Setting E to H				Maximum DP							
Trim No.	Spring Range (psi)	Max. Supply Pressure		E		F		G		H (Min.)	
		psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
6	6 - 24	30	2.1	2145	148			3000	207	3000	207
5	6 - 24	30	2.1	2145	148			3000	207	3000	207
4	6 - 24	30	2.1	2145	148			3000	207	3000	207
3	6 - 24	30	2.1	550	38	783	54	1175	81	2160	149

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

Varilog Anti-Cavitation VariPak

Air to Open with 7700 Positioners

Body Rating: ANSI Class 1500

Leakage: Per IEC 534-4 and ANSI/FCI **Class V**

PTFE Packing

C _v Setting A to D				Maximum DP							
Trim No.	Spring Range (psi)	Max. Supply Pressure		A (Max.)		B		C		D	
		psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
6	6 - 24	30	2.1	930	64	1640	113	2410	166	3000	207
5	6 - 24	30	2.1	930	64	1640	113	2410	166	3000	207
4	6 - 24	30	2.1	930	64	1640	113	2410	166	3000	207
3	6 - 24	30	2.1			290	20	670	46	1045	72

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

C _v Setting E to H				Maximum DP							
Trim No.	Spring Range (psi)	Max. Supply Pressure		E		F		G		H (Min.)	
		psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
6	6 - 24	30	2.1	3000	207			3000	207	3000	207
5	6 - 24	30	2.1	3000	207			3000	207	3000	207
4	6 - 24	30	2.1	3000	207			3000	207	3000	207
3	6 - 24	30	2.1	1410	97	1870	129	2410	166	3000	207

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

**Allowable Pressure Drop for 28002 MS Series
Class V with Adjustable C_v Actuator**

Varilog Anti-Cavitation VariPak
Air to Close with Other Positioners
 Body Rating: ANSI Class 1500
 Leakage: Per IEC 534-4 and ANSI/FCI **Class V**
 PTFE Packing

C _v Setting A to D				Maximum DP							
Trim No.	Spring Range (psi)	Max. Supply Pressure		A (Max.)		B		C		D	
		psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
6	6 - 24	30	2.1	1970	136	2250	155	2550	176	2915	201
5	6 - 24	30	2.1	1970	136	2250	155	2550	176	2915	201
4	6 - 24	30	2.1	1970	136	2250	155	2550	176	2915	201
3	6 - 24	30	2.1	465	32	600	41	740	51	915	63

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

C _v Setting E to H				Maximum DP							
Trim No.	Spring Range (psi)	Max. Supply Pressure		E		F		G		H (Min.)	
		psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
6	6 - 24	30	2.1	3000	207			3000	207	3000	207
5	6 - 24	30	2.1	3000	207			3000	207	3000	207
4	6 - 24	30	2.1	3000	207			3000	207	3000	207
3	6 - 24	30	2.1	1235	85	1535	106	2015	139	3000	207

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

Varilog Anti-Cavitation VariPak
Air to Open with Other Positioners
 Body Rating: ANSI Class 1500
 Leakage: Per IEC 534-4 and ANSI/FCI **Class V**
 PTFE Packing

C _v Setting A to D				Maximum DP							
Trim No.	Spring Range (psi)	Max. Supply Pressure		A (Max.)		B		C		D	
		psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
6	6 - 24	30	2.1	665	46	1320	91	2045	141	2770	191
5	6 - 24	30	2.1	665	46	1320	91	2045	141	2770	191
4	6 - 24	30	2.1	665	46	1320	91	2045	141	2770	191
3	6 - 24	30	2.1			145	10	495	34	840	58

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

C _v Setting E to H				Maximum DP							
Trim No.	Spring Range (psi)	Max. Supply Pressure		E		F		G		H (Min.)	
		psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
6	6 - 24	30	2.1	3000	207			3000	207	3000	207
5	6 - 24	30	2.1	3000	207			3000	207	3000	207
4	6 - 24	30	2.1	3000	207			3000	207	3000	207
3	6 - 24	30	2.1	1190	82	1625	112	2130	147	2785	192

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

**Allowable Pressure Drop for 28001 MS Series
Class V with Non-Adjustable C_v Actuator**

Varilog Anti-Cavitation VariPak

Air to Close with Any Positioner

Body Rating: ANSI Class 1500

Leakage: Per IEC 534-4 and ANSI/FCI **Class V**

PTFE Packing

Trim No.	Max. C _v	Spring Range (psi)	Max. Supply Pressure		Maximum DP	
			psi	bar	psi	bar
6	0.05	6 - 24	40	2.8	3000	207
5	0.1	6 - 24	40	2.8	3000	207
4	0.25	6 - 24	40	2.8	3000	207
3	0.6	6 - 24	40	2.8	3000	207

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

Varilog Anti-Cavitation VariPak

Air to Open with Any Positioner

Body Rating: ANSI Class 1500

Leakage: Per IEC 534-4 and ANSI/FCI **Class V**

PTFE Packing

Trim No.	Max. C _v	Spring Range (psi)	Max. Supply Pressure		Maximum DP	
			psi	bar	psi	bar
6	0.05	6 - 24	30	2.1	525	36
5	0.1	6 - 24	30	2.1	525	36
4	0.25	6 - 24	30	2.1	525	36
3	0.6	6 - 24	30	2.1		

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

**Allowable Pressure Drop for 28000 Series
Class IV with Adjustable or Non-Adjustable C_v Actuator**

28000 HP, High Pressure VariPak

Air to Open or Air to Close with Any Positioner

Body Rating: ANSI Class 2500

Leakage: Per IEC 534-4 and ANSI/FCI **Class IV**

PTFE Packing

Trim No.	Max. C _v	Spring Range (psi)	Max. Supply Pressure		Maximum DP			
					ASTM A 182 Gr. F 316L		ASTM A 182 Gr. F 316 (See Note 3)	
			psi	bar	psi	bar	psi	bar
9	0.004	6 - 24	30	2.1	5000	345	6000	414
8	0.01	6 - 24	30	2.1	5000	345	6000	414
7	0.025	6 - 24	30	2.1	5000	345	6000	414
6	0.05	6 - 24	30	2.1	5000	345	6000	414
5	0.1	6 - 24	30	2.1	5000	345	6000	414
4	0.25	6 - 24	30	2.1	5000	345	6000	414
3	0.6	6 - 24	30	2.1	5000	345	6000	414

- Notes:
1. Consult factory for applications with outlet pressure (P2) exceeding 3625 psig (250 barg).
 2. Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.
 3. ASTM A 182 Gr. F 316 is optional material for higher ΔP applications.

28000 BS, Bellows Seal VariPak

Air to Open or Air to Close with Any Positioner

Body Rating: ANSI Class 150 to 600

Leakage: Per IEC 534-4 and ANSI/FCI **Class IV**

PTFE Packing

Trim No.	Max. C _v	Spring Range (psi)	Max. Supply Pressure		Maximum DP	
			psi	bar	psi	bar
9	0.004	3 - 15	18	1.25	800	55
8	0.01	3 - 15	18	1.25	800	55
7	0.025	3 - 15	18	1.25	800	55
6	0.05	3 - 15	18	1.25	800	55
5	0.1	3 - 15	18	1.25	800	55
4	0.25	3 - 15	18	1.25	800	55
3	0.6	6 - 24	30	2.1	800	55
2	1.2	6 - 24	30	2.1	800	55
1	2.3	6 - 24	30	2.1	800	55

Note: Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.

28000 EB, Cryogenic VariPak

Air to Open or Air to Close with Any Positioner

Body Rating: ANSI Class 150 to 600

Leakage: Per IEC 534-4 and ANSI/FCI **Class IV**

PTFE Packing

Trim No.	Max. C _v	Spring Range (psi)	Max. Supply Pressure		Maximum DP	
			psi	bar	psi	bar
5	0.1	3 - 15	18	1.25	1200	83
4	0.25	3 - 15	18	1.25	1200	83
3	0.6	6 - 24	30	2.1	1200	83
2	1.2	6 - 24	30	2.1	1200	83
1	2.3	6 - 24	30	2.1	1200	83
0	3.8	6 - 24	30	2.1	600	41

- Notes:
1. Trim No. 0 only available up to ANSI Class 300.
 2. Inlet pressure (P1) must not exceed maximum ΔP or the maximum rating of the flanges.